Abstracts

Articles appearing in the March 2018 issue

Characterization of lymphopenia in patients with MS treated with dimethyl fumarate and fingolimod

Objective Lymphopenia is a common occurrence of disease-modifying therapies (DMTs) for relapsing-remitting multiple sclerosis (RRMS). The aim of this study was to dissect the prevalence of various lymphocyte subsets in patients with RRMS treated with 2 DMTs commonly associated with lymphopenia: dimethyl fumarate (DMF) and fingolimod (FTY).

Methods Multicolor flow cytometry and multiplex assays were used to identify up to 50 lymphocyte subpopulations and to examine the expression of multiple cytokines in selected patients. We compared patients not treated (NT) or treated with FTY or DMF who did (DMF-L) or did not (DMF-N) develop lymphopenia.

Results All FTY patients developed lymphopenia in both T-cell and B-cell compartments. CD41 T cells were more affected by this treatment than CD81 cells. In the B-cell compartment, the CD271IgD2 subpopulation was reduced. T cells but not B cells were significantly reduced in DMF-L. However, within the B cells, CD271 cells were significantly lower. Both CD41 and CD81 subpopulations were reduced in DMF-L. Within the remaining CD41 and CD81 compartments, there was an expansion of the naive subpopulation and a reduction of the effector memory subpopulation. Unactivated lymphocyte from DMF-L patients had significantly higher levels of interferon- γ , interleukin (IL)-12, IL-2, IL-4, IL-6, and IL-1 β compared with DMF-N. In plasma, tumor necrosis factor- β was significantly higher in DMF-N and DMF-L compared with NT, whereas CCL17 was significantly higher in DMF-L compared with NT and DMF-N.

Conclusions This study shows that different treatments can target different lymphocyte compartments and suggests that lymphopenia can induce compensatory mechanisms to maintain immune homeostasis.

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Immune myopathies with perimysial pathology: Clinical and laboratory features

Objective Immune myopathies with perimysial pathology (IMPP) have a combination of damage to perimysial connective tissue and muscle fiber necrosis, more prominent near the perimysium. We studied the clinical and laboratory correlates of patients with pathologically defined IMPP.

Methods This is a retrospective chart and pathology review of 57 consecutive patients with IMPP myopathology and, for comparison, 20 patients with dermatomyositis with vascular pathology (DM-VP).

Results Compared with DM-VP, IMPP patients more commonly had interstitial lung disease (ILD) ($p < 0.01$), Raynaud phenomenon ($p < 0.05$), mechanic hands ($p < 0.05$), arthralgias ($p < 0.001$), and a sustained response to immunomodulatory therapy ($p < 0.05$), and less frequently had a concurrent malignancy ($p < 0.01$). IMPP patients had higher serum creatine kinase values ($p < 0.05$), more frequent serum Jo-1 ($p < 0.03$) or SSA/SSA52 autoantibodies ($p < 0.05$), and less frequent antinuclear antibodies ($p < 0.01$). IMPP patients with serum Jo-1/antisynthetase antibodies were more likely to have ILD ($p < 0.05$) and inflammatory arthritis ($p < 0.05$) than IMPP patients without these antibodies.

Conclusions IMPP myopathology is associated with an increased risk of ILD, Raynaud phenomenon, mechanic hands, and inflammatory arthritis when compared with another immune myopathy (DM-VP). IMPP patients require regular screening for ILD, particularly those with antisynthetase antibodies. The absence of myositis-specific autoantibodies in a large percentage of IMPP patients emphasizes the important role for myopathology in identifying patients at higher risk of severe comorbid conditions such as ILD.

[NPub.org/N2/9102b](https://doi.org/10.1212/NX1.0000000000000110)

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